

REMARKS

Applicants thank the Examiner for granting an in-person interview and for discussing the Office Action and the proposed amendments during the interview on October 13, 2005.

The Examiner re-opened the prosecution in response to Applicants' Appeal Brief filed on April 22, 2005, based on new grounds of rejection. By this Amendment, Applicants amend claims 10, 13, 31, 33, 34, and 47. Applicants also cancel claims 15-30 and 35 without any prejudice or disclaimer to the subject matter thereof. Claims 1, 4-14, 31-34, and 36-48 are currently pending, with claims 36-46 withdrawn from consideration.

In the Office Action, the Examiner rejected claims 1,4, 11-13, 15-35, 47, and 48 under 35 U.S.C. § 112, second paragraph, as being indefinite; rejected claims 4, 11, 15-35, 47, and 48 under 35 U.S.C. § 101 because the claims overlap two different statutory classes of invention (apparatus and process/method); rejected claims 15, 16, 20-27, 29-35 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,611,657 to Peterson ("Peterson"); rejected claims 1, 4-11, 13, 14, 17-19, 47, and 48 under 35 U.S.C. § 103(a) as being unpatentable over Peterson in view of U.S. Patent No. 5,503,234 to Liston ("Liston"); rejected claims 4, 11, 15-35, 48 under 35 U.S.C. § 103(a) as being unpatentable over Peterson in view of U.S. Patent No. 6,060,682 to Westbroek et al. ("Westbroek") and further in view of El Wakil, Processing and Design for Manufacturing (Prentice Hall 1989) ("El Wakil"); rejected claims 15-20, 47, and 48 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,158,949 to Walth et al. ("Walth") in view of Liston and further in view of El Wakil; and rejected claims 15-35, 47, and 48 under 35 U.S.C. § 103(a) as being unpatentable over Walth in view of Westbroek and

further in view of El Wakil.¹ The Examiner also indicated that claim 12 would be allowable if Applicants overcome the rejection under 35 U.S.C. § 112, second paragraph.

Regarding Claim Rejection under 35 U.S.C. § 101

Applicants respectfully traverse the Examiner's rejection of claims 4, 11, 15-35, 47, and 48 under 35 U.S.C. § 101. The Examiner alleged that "the claim overlaps two different statutory classes of invention (apparatus and process/method). See MPEP 2173.05p(II)." (Office Action at 3.) Applicants respectfully disagree. M.P.E.P. § 2173.05(p)(II) explicitly states that "A single claim which claims both an apparatus and the method steps of using the apparatus is indefinite under 35 U.S.C. 112, second paragraph." M.P.E.P. § 2173.05(p)(II), emphasis added. However, none of claims 4, 11, 15-35, 47, and 48 recites any method steps of using "a load bearing arrangement," as required by claims 4, 11, and 15-35, or "a load bearing member," as required by claims 47 and 48.

Claim 4 recites, for example, "wherein said support member is laser welded to said end," to define a relationship between the support member and the end, clearly a structure limitation. In addition, structures that are laser welded themselves possess certain physical attributes that are particular to laser weldment but not to non-laser weldment.

¹ The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement or characterization in the Office Action.

Claim 11 recites, for example, “wherein said reinforcement structure is laser welded to said at least one of said pair of side plates,” to define a relationship between the reinforcement structure and the side plates, also a clear structure limitation.

Claims 15-30 and 35 have been canceled. The Section 101 rejection of claims 15-30 and 35 is therefore moot.

Claim 31, as amended to advance the prosecution of this application, no longer recites “said weldment being simulated for effects of heat on at least one of said pieces subject to said weldment before said weldment is constructed.” The Section 101 rejection of claim 31 and its dependent claims 32-34 is therefore also moot.

Claim 47 recites, for example, “at least one bearing, pressure-fitted in the support member, structured to receive a pin,” to add a member to the structure of the load bearing member, also a clear structure limitation. Claim 48 depends claim 47 and therefore include the same above element.

The Examiner seems to suggest that because above listed claims use verbs, thus include functional limitations. Even if this suggestion is true (which it is not), such functional limitations do not inherently make the claims indefinite. “Functional language does not, in and of itself, render a claim improper. *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971). A functional limitation must be evaluated and considered, just like any other limitation of the claim, A functional limitation is often used in association with an element, ingredient, or step of a process to define a particular capability or purpose that is served by the recited element, ingredient or step.” M.P.E.P. § 2173.05(g). As explained above, recited elements in claims 4, 11, 31-34, 47, and 48 are used to define particular relationships and/or purpose of structural members.

Therefore, claims 4, 11, 31-34, 47, and 48 are allowable under Section 101. Accordingly, Applicants respectfully request withdrawal of the Section 101 rejection of claims 4, 11, 31-34, 47, and 48.

Regarding Claim Rejection under 35 U.S.C. § 112

Applicants respectfully traverse the Examiner's rejection of claims 1, 4, 11-13, 15-35, 47, and 48 under 35 U.S.C. § 112, second paragraph, as being indefinite. "A fundamental principle contained in 35 U.S.C. § 112, second paragraph is that applicants are their own lexicographers. They can define in . . . whatever terms they choose so long as the terms are not used in ways that are contrary to accepted meanings in the art." M.P.E.P. § 2173.01. "Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire." M.P.E.P. § 2173.02.

With respect to claim 1, the Examiner alleged that "[c]laim 1 states 'a second load [bearing] member structured and arranged for coupling to the first load bearing member'. The last 8 lines of the claim lay out a coupling means of the second load member but are not correlated with to the aforementioned limitation." (OA at 3.)

Applicants respectfully disagree. The last 8 lines of the claim include, for example, "said second load bearing member having an end comprising a material having a first yield strength," which clearly correlated to "a second load bearing member" in the aforementioned limitation. Accordingly, Applicants respectfully request withdrawal of the Section 112 rejection of claim 1.

With respect to claim 12, the Examiner alleged that "[c]laims 12, 28 fails to define the orientation of the centerline axis of the plates. For example the centerline could be

that of the longitudinal plane the plates are in or it could be perpendicular to longitudinal plane of the plates (stacked plates).” (OA at 3) Applicants respectfully disagree. A broad claim is not necessarily an indefinite claim. Applicants submit that both orientations listed by the Examiner, as well as other orientations, may be included in claim 12. Accordingly, Applicants respectfully request withdrawal of the Section 112 rejection of claim 12.

With respect to claim 13, the Examiner alleged “[c]laim 13 recites the limitation ‘said first bearing member’ in line 2. There is insufficient antecedent basis for this limitation in the claim.” (OA at 3) Applicants respectfully disagree. However, to expedite the prosecution of this application, Applicants have amended claim 13 to recite “said first load bearing member,” as recognized by the Examiner. Accordingly, Applicants respectfully request withdrawal of the Section 112 rejection of claim 13.

With respect to claims 4, 11, 31-34, 47, and 48, for at least the same reasons stated above regarding to the Section 101 rejection of claims 4, 11, 31-34, 47, and 48, the Section 112 rejection of claims 4, 11, 31-34, 47, and 48 should also be withdrawn.

Because claims 15-30 and 35 have been canceled, the Section 112 rejection of claims 15-30 and 35 is moot.

Regarding Claim Rejection under 35 U.S.C. § 103

Applicants respectfully traverse the Examiner’s rejection of claims 1, 4-11, 13, 14, 17-19, 47, and 48 under 35 U.S.C. § 103(a) as being unpatentable over Peterson in view of Liston. In order to establish a *prima facie* case of obviousness, three basic criteria must be met. First, the prior art reference (or references when combined) must teach or suggest all the claim elements. Second, there must be some suggestion or

motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or to combine reference teachings. Third, there must be a reasonable expectation of success. See M.P.E.P. § 2143.

Independent claim 1 recites, for example, “said second load bearing member having an end comprising a material having a first yield strength; an aperture formed in said end and having an aperture wall; at least one support member contained within said aperture adjacent to at least a portion of said aperture wall, said support member having an opening sized to receive a bearing; and said support member having a second yield strength greater than said first yield strength.” Peterson fails to teach or suggest at least the above claim elements as recited in claim 1.

Peterson discloses “[a] loader arm assembly [that] is configured to rotate about an axis defined by a pivot pin.” Peterson, abstract. “[T]he upper arm 58 includes a first side portion or wall 86 and a second side portion or wall 88. . . . The first side portion 86 includes a first void 92. The second side wall 88 includes a second void 94. Together, the first void 92 and the second void 94 form a cavity 96 at the first end 78 of the loader arm assembly.” Peterson, Fig. 4, column 3, line 62 – column 4, line 4. “The pivot tube assembly 120 includes a generally annular pivot tube 122 and first and second plates 124, 126 extending from the pivot tube.” Peterson, column 4, lines 19-21. However, Peterson fails to teach or suggest that pivot tube 122 has a second yield strength greater than the yield strength of cavity wall 86 or 88. Indeed, Peterson does not mention yield strength at all.

The Examiner concedes that “Peterson is silent on the whether the second yield strength is greater than said first yield strength.” (OA at 7) However, the Examiner alleged that “Liston teaches bearing sections having higher yield strength in order to improve performance and durability. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Peterson by Liston to have the second yield strength be greater than said first yield strength in order to improve performance and durability.” (OA at 7) Applicants respectfully disagree. Liston fails to cure Peterson’s deficiencies.

Liston teaches “[a]n improved bearing assembly [that] includes a superhard polycrystalline superlattice coating disposed on one or more surfaces.” Liston, abstract. “The bearing assembly surface 70 is shown to include a superlattice-type polycrystalline composite coating 74 having advantageous mechanical properties.” Liston, column 9, lines 29-31, emphasis added. Further, Liston states that “[t]he most effective wear resistance is typically imparted where all bearing assembly surfaces, such as an outer race, an inner race and a roller element are coated with the coating set forth herein.” Liston, column 8, lines 57-63, emphasis added.

However, Liston’s superhard coating apparently corresponds to wear resistance of structures but not to the stress of structures, with which yield strength associates. Relative hardness does not necessarily correspond to relative yield strength. Thus, Liston’s teaching of wear resistance coating does not constitute “a second yield strength greater than said first yield strength.”

Moreover, in Liston, the superhard coating itself is included in the bearing assembly surface 70. That is, the coating itself cannot exist without the assembly

surface 70 and thus is an integral part of the assembly surface 70. Therefore, Liston's teaching of the superhard coating does not even constitute a "support member," as recited in claim 1. Having an independent "support member having a second yield strength" is therefore to the contrary of Liston's teaching of using a wear resistance coating.

Therefore, neither Peterson nor Liston, taken alone or in any reasonable combination, teaches or suggests all elements of Applicants' invention, as recited in amended claim 1. A *prima facie* case of obviousness has not been established. Accordingly, Applicants respectfully request withdrawal of the Section 103 rejection of claim 1. Because claims 4-11, 13, and 14 depend from allowable claim 1, claims 4-11, 13, and 14 are also allowable over the applied references for at least the reasons stated above. Applicants also request withdrawal of the Section 103 rejection of claims 4-11, 13, and 14.

Independent claim 47, while of different scope, recites similar language to that of claim 1. Claim 47 is therefore also allowable for at least the same reasons stated above. Accordingly, Applicants respectfully request withdrawal of the Section 103 rejection of claim 47 and its dependent claim 48.

Because claims 17-19 have been canceled, the Section 103 rejection of claims 17-19 is moot.

Applicants also respectfully traverse the Examiner's rejection of claims 4, 11, 15-35, 48 under 35 U.S.C. § 103(a) as being unpatentable over Peterson in view of Westbroek and further in view of El Wakil. Because claims 15-30 and 35 have been

canceled, the Section 103 rejection of claims 15-30 and 35 is moot. Claims 4 and 11 depend from claim 1.

As explained above, Peterson fails to teach or suggest at least “said second load bearing member having an end comprising a material having a first yield strength; an aperture formed in said end and having an aperture wall; at least one support member contained within said aperture adjacent to at least a portion of said aperture wall, said support member having an opening sized to receive a bearing; and said support member having a second yield strength greater than said first yield strength,” as recited in claim 1. Westbroek and El Wakil, even if they disclose welding and heat simulation (which Applicants do not agree), fail to cure Peterson’s teaching with respect to the above claim elements. Therefore, claim 1 is allowable over Peterson in view of Westbroek and El Wakil.

Because claims 4 and 11 depend from claim 1, claims 4 and 11 are also allowable for at least being dependent from an allowable base claim. Further, independent claims 31 and 47, as amended, recite similar language to that of claim 1. Claims 31 and 47 are therefore also allowable over the applied references for at least the same reasons stated above. Claims 32-34 and 48 are thus also allowable for at least being dependent upon allowable base claims 31 and 47, respectively. Accordingly, Applicants respectfully request withdrawal of the Section 103 rejection of claims 4-11, 31-34, 47, and 48.

Applicants also respectfully traverse the Examiner’s rejection of claims 15-20, 47, and 48 under 35 U.S.C. § 103(a) as being unpatentable over Walth in view of Liston

and further in view of El Wakil. Claims 15-20 have been canceled. The Section 103 rejection of claims 15-20 is therefore moot.

Amended independent claim 47 recites, for example, “at least one support member comprising a material having a second yield strength, wherein the support member is contained within the aperture adjacent to at least a portion of said aperture wall and the second yield strength is greater than the first yield strength.” Walth fails to teach or suggest at least the above claim elements as recited in claim 47.

Walth discloses a boom assembly of a work machine including a coupling subassembly. “Coupling subassembly 24 further includes a boss 50 having an end 60, an end 62, and a pin passageway 52 extending there through.” Walth, column 3, lines 16. “Coupling subassembly 24 also includes an auxiliary support member 46 having a hole 54 defined therein, and an auxiliary support member 48 having a hole 74 defined therein. . . .” Walth, column 3, lines 6-13. However, Walth does not mention any yield strength of members of the coupling assembly.²

Further, as explained above, Liston’s teaching of coating and El Wakil’s teaching of general weldment knowledge fail to cure Walth’s deficiencies. Therefore, none of Walth, Liston, and El Wakil teaches or suggests the above elements as recited in claim 47 and required by claim 48. A *prima facie* case of obviousness has not been established regarding to claims 47 and 48. Accordingly, Applicants respectfully request withdrawal of the Section 103 rejection of claims 47 and 48.

Applicants also respectfully traverse the Examiner’s rejection of claims 15-35, 47, and 48 under 35 U.S.C. § 103(a) as being unpatentable over Walth in view of

² The Examiner recognized this by stating “Walth is silent on whether the second yield strength is greater than said first yield strength.” (OA at 10).

Westbroek and further in view of El Wakil. Claims 15-30 and 35 have been canceled.

The Section 103 rejection of claims 15-30 and 35 is therefore moot.

Further, as explained above, Walth fails to teach or suggest “a first end attached to the second member and comprising a material having a first yield strength; an aperture formed in the first end and having an aperture wall; at least one support member contained within the aperture adjacent to at least a portion of the aperture wall; and the support member having a second yield strength greater than said first yield strength,” as recited in amended claim 31, or “at least one support member comprising a material having a second yield strength, wherein the support member is contained within the aperture adjacent to at least a portion of said aperture wall and the second yield strength is greater than the first yield strength,” as recited in claim 47. Moreover, Westbroek and El Wakil, even if they disclose welding and heat simulation (which Applicants do not agree), fail to cure Walth’s teaching with respect to the above claim elements.

Therefore, Walth, Westbroek, and El Wakil fail to teach all elements of Applicants’ invention recited in claims 31 and 47. A prima facie case of obviousness has not been established. Accordingly, Applicants respectfully request withdrawal of the Section 103 rejection of claims 31 and 47. Because claims 32-34 depend from claim 31, and claim 48 depends from claim 47, Applicants also request withdrawal of the Section 103 rejection of claims 32-34 and 48 for at least the same reasons above.

Regarding Claim Rejection under 35 U.S.C. § 102

Applicants respectfully traverse the Examiner’s rejection of claims 15, 16, 20-27, 29-35 under 35 U.S.C. § 102(b) as being anticipated by Peterson. Claims 15, 16, 20-

27, 29, and 30 have been canceled. The Section 102 rejection of claims 15, 16, 20-27, 29, and 30 is therefore moot.

In order to anticipate Applicants' claimed invention under 35 U.S.C. § 102, each and every element of the claim in issue must be found, either expressly described or under principles of inherency, in a single prior art reference. Further, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." See M.P.E.P. § 2131, quoting Richardson v. Suzuki Motor Co., 868 F.2d 1126, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989).

Independent claim 31, as amended, recites, for example, "a first end attached to the second member and comprising a material having a first yield strength; an aperture formed in the first end and having an aperture wall; at least one support member contained within the aperture adjacent to at least a portion of the aperture wall; and the support member having a second yield strength greater than said first yield strength," which is similar to that of claim 1. As explained above with respect to the Section 103 rejection of claim 1, Peterson fails to disclose at least the above claim elements as recited in amended claim 31.

Therefore, Peterson fails to disclose each and every element of claim 31. Peterson thus cannot anticipate Applicants' invention as recited in claim 31 under 35 U.S.C. § 102. Accordingly, Applicants respectfully request withdrawal of the Section 102 rejection of claim 31. Further, because claims 32-34 depend from claim 31, Applicants also request withdrawal of the Section 102 rejection of claims 32-34 for at least the same reasons above.

Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request the Examiner's reconsideration of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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